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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/550,475 | 07/10/2006 | Gerhard Hartwich | 212/786US | 4616 |

7590 03/05/2009
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| EXAMINER |
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RAO, G NAGESH

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| ART UNIT | PAPER NUMBER |
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1792

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| MAIL DATE | DELIVERY MODE |
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03/05/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/550,475 | Applicant(s) HARTWICH ET AL. | |
| | Examiner G. NAGESH RAO | Art Unit 1792 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 18, 21, 25 and 31-35 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12, 18, 21, 25 and 31-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/20/05</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

- 1) Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because it fails to meet the prescribed conditions listed above, but rather repeats claim 1 of the currently claimed invention. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 2) Regarding claim 12, the phrase "especially" with respect to the "thiols" general structure renders the claim indefinite because it is unclear whether the

limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3) Claims 1-12, 18, 21, 25, and 31-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Whitesides (WO 96/29629).

With respect to claims 1, 21, 25, and 31-34 Whitesides 629 teaches a substrate having a surface that may be wetted, providing a wetting fluid, applying a protective layer to the substrate (i.e. a photoresist), whereby a patterning imprint on the top layer occurs in order to expose a plurality of segment areas on the substrate for treatment, and application of a wetting fluid to the exposed portions of the substrate, wherein the wetting apparatus applies the fluid without direct contact means to the substrate as it exhibits a fluid-dispensing end surface whose lateral dimension in at least one direction in space is greater than the lateral dimension of

the wetting area in the at least one direction in space (Figure 9 Series and Figure 13, also see Pp 20-22 and 27).

With respect to claims 2-3, the substrate and the surface that may be wetted is Silicon which anticipates “semiconductor” (See P. 20).

With respect to claims 4 and 7-8, the Si layer substrate has a thin layer resist of Gold (reading on solder resist) over titanium grown over at size of (100/1000 angstroms) is coated on the substrate which would read on the substrate being comprised of a micro or nanoparticle and the application of Gold as a photoresist layer may be either positive or negative as the protective layer (see Pp. 20-21).

With respect to claim 5, the wetting fluid may be a fluid precursor (see Page 27, Lines 14-31).

With respect to claim 6 the protective layer may be chemisorbed or physisorbed to the substrate surface to be wetted (Examples include resist being layered on the substrate or the self assembled monolayers See Pp. 20-22 and 27 also See P. 11 for alternative layering).

With respect to claims 9-11 the protective layer may be an organic self assembled monolayer may be cellulosic, and whereby the molecular layer can be dissolved in an aqueous or organic solvent (i.e. etchant) (See Pp. 10-14 and Figure 1 Series).

With respect to claim 12 the self assembled monolayer interacts the with substrate surface that is wetted and may be formed with the gold layer, and protective layer (i.e. the SAMS) is comprising of a thiol having the general HS spacer R structure (See Pp. 10-14 and Also See example 3 P. 34).

With respect to claim 18 Whitesides 629 does teach that it is well known to use photolithographic means for the patterning of the protective layer, which therefore reads on as a laser/irradiation means. It furthermore discloses in the teachings of an irradiated means for treating the layer (See P. 1 background of the invention as well P. 7 Lines 19-32).

With respect to claim 35 the wetting fluid applied to the substrate may be of a modified nucleic acid oligomer in aqueous solution and modified with one or more reactive groups (See Pp. 10-11 and Examples 2-3).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to G. NAGESH RAO whose telephone number is (571)272-2946. The examiner can normally be reached on 8:30AM-5PM (INDEPENDENT FLEX SCHEDULE).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MIKHAIL KORNNAKOV can be reached on (571)272-

1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. Nagesh Rao/
GAU 1792 Patent Examiner